

### **REMARKS**

This responds to the Office Action dated November 10, 2009. Claims 1, 34-35, 37-44, and 50 are amended, claims 40 and 42 are canceled, and no claims are added. As a result, claims 1-39, 41, and 43-50 are now pending in this application.

#### **The Rejection of Claims Under § 101**

Claim 1-50 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

The Office Action states:

Regarding claim(s) 1 - 43, said claims are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of *In Re Bilski* 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process.<sup>1</sup>

Claim 1 has been amended to recite, *inter alia*, “determining, ***using a relay detection system implemented at least in part in hardware***, that a feature of an original source of said first information element and a feature of the potential relay device are features unlikely to relate to a single device.” Support for this claim amendment can be found in Applicants’ as-filed patent application at, for example, page 14, lines 21-23, p. 15, line 19-21, and p. 16, line 32 – p.17, line 5.

Applicant asserts that independent claim 1 is statutory since it is specifically tied to using a relay detection system. As a result, claim 1 is patent-eligible under § 101 because it is at least

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<sup>1</sup> The Office Action p. 2, para. 4.

ties to a particular machine or apparatus and therefore satisfies the *Bilski* test. Claims 2-33 all depend on independent claim 1 and include all limitations therein. For at least the reasons stated above, claims 2-33 also are patent-eligible under § 101.

Independent claims 34-35 and 37-43 have also been amended to include using a relay detection system. Claim 36 depends from independent claim 35 and includes all limitations therein. As a result, for at least the reasons stated above, claim 34-43 are also patent-eligible under § 101.

Regarding claim 44, the Examiner argues “the elements of claim 44 appear to be directed solely to software and thus non-statutory subject matter.”<sup>2</sup> Claim 44 has been amended to recite, *inter alia*, a “system, **implemented at least in part in hardware**” and “a feature incompatibility analyzer, **using a feature database**.” Support for the amendments may be found in at least p. 15, line 19-21 and p. 37, lines 20-21 of the as-filed application. Applicants submit that, as amended, claim 44 may not be interpreted to be directed solely to software and as a result, claim 44 is directed toward statutory subject matter. Claims 45-49 all depend from claim 44 and include all limitations therein. Therefore claims 45-49 are also directed toward statutory subject matter for at least the reasons above.

Regarding claim 50, the Examiner argues the “claim is directed to ‘Computer software.’”<sup>3</sup> Claim 50 has been amended to recite, *inter alia*, a “computer-readable storage medium comprising instructions, which when executed by a computer cause the computer to perform operations.” Applicants submit that amended claim 50 is directed to a computer-readable storage medium and, as a result, is directed to statutory subject matter.

For the reasons presented above, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 1-50 under 35 U.S.C. §101.

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<sup>2</sup> The Office Action p. 2, para. 5.

<sup>3</sup> The Office Action p. 3, para. 7.

*The Rejection of Claims Under § 112*

Claims 28-29 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner argues that “[e]ach of claims 28 and 29 recite a ‘round trip time gap’; after consulting Applicant’s specification, it remains unclear what Applicant intends to convey through use of said term.”<sup>4</sup>

Applicants direct the Examiner to at least p. 19, line 20 of the as filed application, which recites “RoundTrip Time (RTT),” and p. 20, line 9-10 of the as-filed application, which recites “the term ‘RTT gap’ refers to the difference between ISD RTT and PRD RTT.” Applicants respectfully submit that in light of the at least the above portions of the as-filed application, Applicants have satisfied the requirements of 35 U.S.C. § 112, second paragraph and respectfully request the Examiner to reconsider and withdraw the rejection of claims 28-29 under 35 U.S.C. § 112, second paragraph.

*The Rejection of Claims Under § 103*

Claims 1-5, 8-20, 32, 37-38, 41 and 43-50 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pazi (U.S. Publication No. 2003/0110274) in view of Mackay (comp.os.ms-windows.networking.tcp-ip. "Can my ISP say if i'm using a proxy?" 2/16/2002. pgs. 1 - 4., hereinafter; “Mackay”).

*Regarding Claims 1-5, 8-20, and 32*

Amended claim 1 recites:

A method of determining whether a potential relay device is a relay device, the method comprising:

a) *receiving, from the potential relay device, a first information element and a second information element*, wherein

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<sup>4</sup> The Office Action at 3, para. 9.

the potential relay device is an original source of said second information element; and

b) ***determining, using a relay detection system, that a feature of an original source of said first information element and a feature of the potential relay device are features unlikely to relate to a single device***, said determining being indicative that the potential relay device is a relay device.

Applicants submit that Pazi and Mackay, singularly or in combination, do not teach or suggest at least the limitations of “***receiving, from the potential relay device, a first information element and a second information element***” and “***determining, using a relay detection system, that a feature of an original source of said first information element and a feature of the potential relay device are features unlikely to relate to a single device***” as recited in amended claim 1.

Pazi merely discusses a network guard system that “screens the number of hops traversed by incoming packets in order to assess which packets constitute legitimate network traffic, and which are spoofed. Typically, in IP networks, the number of hops is indicated by the TTL field in the header of each packet. The guard system stores records of IP source addresses together with the expected TTL value (or number of hops) of packets arriving from each source address. If the TTL value of an incoming packet matches the stored TTL value or number of hops for the source address of the packet (to within a tolerance that may be allowed for network instabilities), ***the guard system recognizes the packet as likely to be legitimate.***”<sup>5</sup> In contrast, claim 1 recites “determining . . . that a feature of an original source of said first information and a feature of the potential relay device are features ***unlikely to relate to a single device.***” As a result, this portion of Pazi does not teach or suggest what is recited in claim 1.

In Pazi, if the TTL value of the packet does not match the stored value, this ***indicates spoofing or packets containing bogus IP source addresses***<sup>6</sup> and “the guard treats the packet as suspect, and either discards it or allows it to pass with a priority that is reduced.”<sup>7</sup> A TTL value of a spoofed packet is ***not from the same source*** as the stored TTL value. In contrast, in claim 1

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<sup>5</sup> Pazi at para. [0007].

<sup>6</sup> See Pazi at para. [0004].

<sup>7</sup> Pazi at para. [0008].

*both* a first information element and a second information element are received *from the potential relay device*. As a result, this portion of Pazi also does not teach or suggest what is recited in claim 1.

Finally, in Pazi, “when the guard system receives a packet for whose IP source address there is no corresponding TTL value, the system initiates a procedure for verifying the TTL value of the packet.”<sup>8</sup> For example, the guard device may construct an outgoing message packet addressed to the IP source address of the received packet where the message is of a type that requires the recipient to respond.<sup>9</sup> “The guard device then reads the value of the TTL field from . . . the received packet . . . If the current and previous TTL values are equal, the guard device concludes that *the values are correct and valid*.”<sup>10</sup> Again, in contrast, claim 1 recites “determining . . . that a feature of an original source of said first information and a feature of the potential relay device are features *unlikely to relate to a single device*.” As a result, this portion of Pazi does not teach or suggest what is recited in claim 1.

To summarize, Pazi does not teach or suggest what is recited in claim 1 when the TTL value of the packet matches the stored value, when the TTL value of the packet does not match the stored value, and when there is no stored value. As a result, Applicants submit that Pazi does not teach or submit what is recited in claim 1.

Mackay, on the other hand, simply discusses methods an internet service provider (ISP) can use to detect if a user is using proxy services.<sup>11</sup> For example, a TTL value may be accessed and if it is “less than the value you are expecting, then the user is behind a NAT gateway,” headers may be inspected for proxy traffic, or signatures of common NAT routers and proxy servers may be looked for.<sup>12</sup> However, Mackay also fails to teach or suggest “receiving, from the potential relay device, a first information element and a second information element” and “*determining, using a relay detection system, that a feature of an original source of said first*

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<sup>8</sup> Pazi at para. [0009].

<sup>9</sup> Pazi at para. [0057].

<sup>10</sup> Pazi at para. [0064].

<sup>11</sup> Mackay at p. 2.

<sup>12</sup> *Id.*

***information element and a feature of the potential relay device are features unlikely to relate to a single device***” as recited in amended claim 1.

As a result, both Pazi and Mackay, singularly or in combination, do not teach or suggest all the limitations in claim 1. Furthermore, independent claims 38, 41, 43, and 50 recite limitations similar to those above and therefore are patentable for the same reasons as those presented above. Claims 2-5, 8-20, 32, and 44-49 all depend, either directly or indirectly, from claims 1 and 43 and include all limitations therein and therefore are also patentable for the same reasons as the claim from which they depend. Further, these dependent claims may each be patentable for its own limitations. Since Applicants have shown that not all the claimed elements were known by Pazi and Mackay, Applicants respectfully submit that claims 1-5, 8-20, 32, and 43-50 are patentable and request the Examiner to reconsider and withdraw the rejection under 35 U.S.C. §103.

**Regarding Claims 37**

Claim 37 has been amended. Support for this amendment may be found in at least page 29, lines 24-31. As amended, claim 37 recites, *inter alia*,

- a) ***sending a message to an information source device, triggering said information source device to send a DNS request to a DNS server;***
- b) ***monitoring said DNS request*** from said information source device to said DNS server; and
- c) determining, using a relay detection system, from said DNS request whether said potential relay device is a relay device.

Pazi discusses a guard device constructing and sending<sup>13</sup> “an outgoing message packet . . . [t]he message is of a type that requires the recipient to respond, in such a way that if the guard device receives a response, it will know that the source IP is real, not spoofed . . . for example: . .

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<sup>13</sup> Pazi at paras. [0057] and [0062].

. A DNS request packet.”<sup>14</sup> Thus in Pazi, *the guard device sends a DNS request packet and receives a response from the recipient.*<sup>15</sup> However, in contrast to Pazi, claim 37 recites “*sending a message to an information source device triggering said information source device to send a DNS request to a server.*”

Furthermore, Pazi merely receives the response from the recipient. Pazi does not discuss or even hint at monitoring DNS communications between the recipient and a DNS server. As a result, Pazi cannot teach or suggest “*monitoring said DNS request from said information source device to said DNS server*” as recited in claim 37

The addition of Mackay also does not cure these defects. As a result, Applicants submit that independent claim 37 is patentable under 35 U.S.C. §103.

#### Regarding Claims 6-7 and 33

Claims 6-7 and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pazi in view of Mackay as applied to claim 1 above, and further in view of Reed (Applying the OSI Seven Layer Network Model to Information Security. November 21, 2003, hereinafter; “Reed”).

Claims 6-7 and 33 depend, either directly or indirectly, from independent claim 1 and include all limitations therein. As discussed above, the combination of Pazi and Mackay does not disclose all elements claimed. The addition of Reed does not cure this defect. As a result, claims 6-7 and 33 are also patentable and request the Examiner to reconsider and withdraw the rejection under 35 U.S.C. §103. Further, these dependent claims may each be patentable for its own limitations.

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<sup>14</sup> Pazi at paras. [0057-60].

<sup>15</sup> *Id.* at para. [0064].

Regarding Claims 21-23 and 34

Claims 21-23 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pazi in view of Mackay as applied to claim 1 above, and further in view of Nilsen (alt.comp.lang.php. "how to detect PROXY?" 12/24/2001. pgs. 1-2, hereinafter; "Nilsen").

Claims 21-23 depend, either directly or indirectly, from independent claim 1 and include all limitations therein. As discussed above, the combination of Pazi and Mackay does not disclose all elements claimed. The addition of Nilsen does not cure this defect. As a result, claims 21-23 are also patentable and Applicants respectfully request the Examiner to reconsider and withdraw the rejection under 35 U.S.C. §103. Further, these dependent claims may each be patentable for its own limitations.

Independent claim 34 has been amended to include the limitation of "determining, using a relay detection system, whether a feature of an original source of said first information element and a feature of the potential relay device are features unlikely to relate to a single device." As discussed above with respect to claim 1, the combination of Pazi and Mackay does not teach or suggest at least this limitation. The addition of Nilsen does not cure this defect. As a result, claim 34 is also patentable and Applicants respectfully request the Examiner to reconsider and withdraw the rejection under 35 U.S.C. §103.

Regarding Claims 24-31, 35-36 and 39

Claims 24-31, 35-36 and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pazi in view of Mackay as applied to claim 1 above, and further in view of Daude (U.S. Patent No. 6,892,235).

Claims 24-31 depend, either directly or indirectly, from independent claim 1 and include all limitations therein. As discussed above, the combination of Pazi and Mackay does not disclose all elements claimed. The addition of Daude does not cure this defect. As a result, claims 24-31 are also patentable and Applicants respectfully request the Examiner to reconsider



and withdraw the rejection under 35 U.S.C. §103. Further, these dependent claims may each be patentable for its own limitations.

Independent claim 35 has been amended to include the limitation of “determining, using a relay detection system, whether a feature of an original source of said first information element and a feature of the potential relay device are features unlikely to relate to a single device, wherein a positive result of said determining is indicative that the potential relay device is a relay device.” As discussed above with respect to claim 1, the combination of Pazi and Mackay does not teach or suggest at least this limitation. The addition of Daude does not cure this defect. As a result, claim 35 is also patentable and Applicants respectfully request the Examiner to reconsider and withdraw the rejection under 35 U.S.C. §103. Claim 36 depends from independent claim 35 and includes all limitations therein. As a result, claim 36 is also patentable and Applicants respectfully request the Examiner to reconsider and withdraw the rejection under 35 U.S.C. §103. Further, claim 36 may each be patentable for its own limitations.

**CONCLUSION**

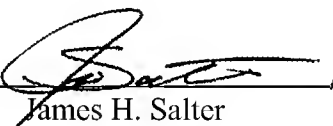
Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the undersigned at (408) 406-4855 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

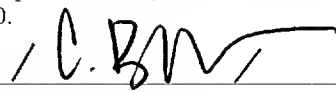
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Date 10 March 2010

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 10th day of March, 2010.

Chris Bartl  
Name

  
Signature